



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/649,951	08/29/2000	Hirofumi Takei	1232-4642	8937

7590 08/03/2004
Morgan & Finnegan LLP
345 Park Avenue
New York, NY 10154

EXAMINER

MOE, AUNG SOE

ART UNIT	PAPER NUMBER
----------	--------------

2612

DATE MAILED: 08/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/649,951

Applicant(s)

TAKEI, HIROFUMI

Examiner

Aung S. Moe

Art Unit

2612

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Species II of Figs. 8-13B and claims 1-33 as set forth in the reply filed on May 17, 2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

The requirement is still deemed proper and is therefore made FINAL.

Drawings

2. Figures 14 and 19 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-7, 11-12, 14-20, 28 and 30-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Iijima (U.S. 5,923,371).

Regarding claim 1, Iijima '371 discloses an apparatus (Fig. 3) comprising: (A) a photo-receiving device (4) that receives light from an object and converts the light into an image signal (col. 1, lines 25+); and

(B) a focus adjusting device (Fig. 1, the elements' 18) that forms a first focus adjusting signal by performing a predetermined integration operation (i.e., Fig. 4; col. 5, lines 1-25) on a predetermined frequency component of the image signal obtained by said photo receiving device (i.e., noted that the image captured by the sensor 4 contains a specific prescribed frequency component further processed in the focus adjustment control device 18; see Figs. 4 and 5, col. 5, lines 4+) and

forms a second focus adjusting signal (i.e., noted the signal S1), different from, said first focus adjusting signal (i.e., noted the signal E6 as shown in Fig. 3), from a peak value (i.e., the

Art Unit: 2612

element 10 of Fig. 3) of a predetermined frequency component of the image signal obtained by said photo receiving device (i.e., noted the Peak detection circuit 10 as shown in Fig. 3; see col. 4, lines 30+), said focus adjusting device applying at least one of said first and second focus adjusting signals to focus adjustment on the basis of a luminous state of the object (i.e., see Fig. 6, the steps 2-6; noted that the mode change-over switch 15 selects one of the signals based on the luminous condition of the objected captured by the camera; see col. 5, line 30+).

Regarding claim 2, Iijima '371 discloses wherein said predetermined frequency component is a frequency component on a predetermined high frequency side (i.e., col. 4, lines 30-35).

Regarding claim 3, Iijima '371 discloses wherein said focus adjusting device judges the state of the luminous state of the object on the basis of the image signal obtained by said photo-receiving device (Fig. 4 and 5; col. 4, lines 30+ and col. 5, lines 5+).

Regarding claim 4, Iijima '371 discloses wherein said focus adjusting device applies at least one of said first and second focus adjusting signals (i.e., the signals S1 and E6) to the focus adjustment on the basis of a luminous distribution state of the object (i.e., Figs. 4-6, col. 5, lines 5-68).

Regarding claim 5, Iijima '371 discloses wherein said focus adjusting device applies said second focus adjusting signal to the focus adjustment in a case where an object image is judged as a peak image on the basis of the luminous state of the object (i.e., Figs. 4-6, col. 4, lines 30+ and col. 5, lines 5-68).

Regarding claim 6, Iijima '371 discloses wherein said focus adjusting device applies said first focus adjusting signal to the focus adjustment in a case where an object image is not judged

Art Unit: 2612

as a peak image on the basis of the luminous state of the object (i.e., Figs. 4-6, col. 4, lines 30+ and col. 5, lines 5-68).

Regarding claim 7, Iijima '371 discloses wherein said focus adjusting device applies said first focus adjusting signal to the focus adjustment in a case where an object image is not judged as a peak image on the basis of the luminous state of the object (i.e., Figs. 4-6, col. 4, lines 30+ and col. 5, lines 5-68).

Regarding claim 11, Iijima '371 discloses wherein said focus adjusting device forms said second focus adjusting signal by obtaining said peak value without performing said predetermined integration operation on the predetermined frequency component of the image signal obtained by said photo-receiving device (i.e., noted that when the signal S1 is selected as shown in Fig. 6, the integration operation of the circuit 18 as shown in Fig. 4 is not necessary to perform to drive the focus lens).

Regarding claim 12, Iijima '371 discloses wherein said focus adjusting device forms said second focus adjusting signal (S1) from a single peak value (i.e., noted the Peak detection circuit 10 as shown in Fig. 3) of a predetermined frequency component of the image signal obtained by said photo-receiving device (i.e., Fig. 4, lines 30+).

Regarding claim 14, Iijima '371 discloses wherein said focus adjusting device applies at least one of said first and second focus adjusting signals (i.e., the signals S1 and E6) to the focus adjustment in consideration of a state of a focal length (i.e., noted the zoom encoder 20 and iris encoder 21 for providing the focal length of the camera to perform a specific focus control process as shown in Fig. 6; see col. 5, lines 45+ and col. 6, lines 34+).

Art Unit: 2612

Regarding claim 15, Iijima '371 discloses wherein said focus adjusting device applies at least one of said first and second focus adjusting signals to the focus adjustment in consideration of a state of an iris (i.e., see col. 5, lines 45+ and col. 6, lines 34+).

Regarding claim 16, Iijima '371 discloses wherein said focus adjusting device applies at least one of said first and second focus adjusting signals to the focus adjustment in consideration of a state of an iris (i.e., see col. 5, lines 45+ and col. 6, lines 34+).

Regarding claim 17, Iijima '371 discloses wherein said focus adjusting device changes a focus adjusting signal to be applied to the focus adjustment from said second focus adjusting signal to said first focus adjusting signal as depth of field is deepened by at least one of a focal length and an iris (i.e., see col. 5, lines 45+ and col. 6, lines 34+).

Regarding claim 18, Iijima '371 discloses wherein said apparatus comprises an image sensing apparatus (i.e., noted the sensor 4).

Regarding claim 19, Iijima '371 discloses wherein said apparatus comprises a camera (i.e., noted that the device as shown in Fig. 3 is a video camera; see col. 1, lines 15+).

Regarding claim 20, Iijima '371 discloses wherein said apparatus comprises an optical device (i.e., noted the elements' 1, 2, and 3 of Fig. 3).

Regarding claim 28, Iijima '371 discloses a focus adjusting method comprising:
converting light from an object into an image signal (i.e., col. 1, lines 24+),

forming a first focus adjusting signal by performing a predetermined integration operation on a predetermined frequency component of the image signal (i.e., noted that the image captured by the video camera contains a specific prescribed frequency component further processed in the focus adjustment control device 18; see Figs. 4 and 5, col. 5, lines 4+),

Art Unit: 2612

forming a second focus adjusting signal (i.e., the signals S1), different from said first focus adjusting signal (i.e., the signal E6), from a peak value of a predetermined frequency component of the image signal (i.e., noted the Peak detection circuit 10 as shown in Fig. 3; see col. 4, lines 30+), applying at least one of said first and second focus adjusting signal to focus adjustment on the basis of a luminous state of the object (i.e., see Fig. 6, the steps 2-6; noted that the mode change-over switch 15 selects one of the signals based on the luminous condition of the objected captured by the camera; see col. 5, line 30+).

Regarding claim 30, Iijima '371 discloses a computer program product (i.e., noted that the video camera of Fig. 3 contains a focus control program product as shown in Fig. 6) comprising:

converting light from an object into an image signal (col. 1, lines 25+), forming a first focus adjusting signal by performing a predetermined integration operation on a predetermined frequency component of the image signal (i.e., noted that the image captured by the video camera contains a specific prescribed frequency component further processed in the focus adjustment control device 18; see Figs. 4 and 5, col. 5, lines 4+),

forming a second focus adjusting signal (i.e., the signal S1), different from said first focus adjusting signal (E6), from a peak value of a predetermined frequency component of the image signal (i.e., noted the Peak detection circuit 10 and the BPF 8 as shown in Fig. 3; see col. 4, lines 30+),

applying at least one of said first and second focus adjusting signal to focus adjustment on the basis of a luminous state of the object (i.e., see Fig. 6, the steps 2-6; noted that the mode

Art Unit: 2612

change-over switch 15 selects one of the signals based on the luminous condition of the objected captured by the camera; see col. 5, line 30+).

Regarding claim 31, Iijima '371 discloses wherein said computer program product comprises a storage medium (i.e., it is noted that a storage medium must be provided in the video camera as shown in Fig. 3 in order to perform the focus control routines as shown in Fig., thus, a storage medium is considered as an inherent feature of the video camera as shown in Fig. 3).

5. Claims 21-27, 29 and 32-33 rejected under 35 U.S.C. 102(b) as being anticipated by Lee et al. (U.S. 5,614,951).

Regarding claim 21, Lee '951 discloses an apparatus comprising: (A) a photo-receiving device for receiving light from an object (Fig. 4, the elements 120); and

(B) a focus adjusting device performing an operation for focus adjustment (i.e., Fig. 4, elements 151-210; col. 1, lines 10-20), said focus adjusting device performing the operation depending upon determination whether or not an object image has a luminous state judged as a peak image on the basis of a photo-received signal from said photo-receiving device (i.e., Figs. 5 and 7; col. 4, lines 10-30 and col. 6, lines 15+).

Regarding claim 22, Lee '951 discloses wherein said focus adjusting device forms a signal for the focus adjustment on the basis of the photo-received signal from said photo-receiving device (i.e., col. 5, lines 50+ and col. 6, lines 40+).

Art Unit: 2612

Regarding claim 23, Lee '951 discloses wherein said focus adjusting device forms a signal for the focus adjustment by detecting sharpness of an object image (i.e., col. 4, lines 14+, and col. 5, lines 50+).

Regarding claim 24, Lee '951 discloses wherein said focus adjusting device forms a signal for the focus adjustment by detecting sharpness of an object image (i.e., col. 4, lines 14+, and col. 5, lines 50+).

Regarding claim 25, Lee '951 discloses wherein said apparatus comprises an image sensing apparatus (i.e., col. 1, lines 15+).

Regarding claim 26, Lee '951 discloses wherein said apparatus comprises a camera (i.e., col. 1, lines 15+).

Regarding claim 27, Lee '951 discloses wherein said apparatus comprises an optical device (Fig. 4, the lens unit 100).

Regarding claim 29, Lee '951 discloses a focus adjusting method (i.e., Figs. 5 and 7) comprising: performing an operation for focus adjustment depending upon determination whether or not an object image has a luminous state judged as a peak image on the basis of a photo-received signal of light of the object (i.e., col. 4, lines 10-30 and col. 6, lines 15+).

Regarding claim 32, Lee '951 discloses a computer program product (i.e., noted that the video camera of Fig. 4 contains a focus control program product as shown in Figs. 5 and 7) comprising: performing an operation for focus adjustment depending upon determination whether or not an object image has a luminous state judged as a peak image on the basis of a photo-received signal of light of the object (i.e., col. 4, lines 10-30 and col. 6, lines 15+).

Art Unit: 2612

Regarding claim 33, Lee '951 discloses wherein said computer program product comprises a storage medium (i.e., noted that a storage medium is an inherent feature of the video camera as shown in Fig. 3).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima '371 in view of Senuma et al. (U.S. 5,126,849).

Regarding claim 8, although Iijima '371 shows in Fig. 4 that focus adjusting device forms said first focus adjusting signal (E6) by integrating the predetermined frequency component of the image signal (i.e., noted the integral circuit 24) obtained by said photo-receiving device (i.e., the image sensor 4) and further held by a peak hold circuit (26), Iijima '371 does not explicitly shows that the predetermined peak value is integrated by the integration circuit.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Senuma '849. In particular, Senuma '849 teaches that it is notoriously well known in art to integrate a predetermined peak value to generate a focus-adjusting signal in the camera

Art Unit: 2612

(i.e., see Fig. 8, noted that the integrator 30 is integrating a predetermined peak value provided by the Peak Hold Circuit 39f to generate a focus-adjusting signal; col. 5, lines 1-35) so that the contrast of ordinary subjects of lower brightness can be properly detected (i.e., see col. 3, lines 30+).

In view of the above, having the AF control system of Iijima '371 and then given the well-established teaching of Senuma '849, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Iijima '371 as taught by Senuma '849, since Senuma '849 states at col. 6, lines 1, that such a modification would improve a S/N ratio of the automatic focusing control device and proper detection of the contrast of lower brightness can be realized.

Regarding claim 9, the combination of Iijima '371 and Senuma '849 discloses wherein said focus adjusting device forms said second focus adjusting signal by obtaining said peak value without performing said predetermined integration operation on said predetermined frequency component of the image signal obtained by said photo-receiving device (i.e., noted that when the signal S1 is selected as shown in Fig. 6 of Iijima '371, the integration operation of the circuit 18 as shown in Fig. 4 is not necessary to perform to drive the focus lens).

Regarding claim 10, the combination of Iijima '371 and Senuma '849 discloses wherein said focus adjusting device forms said second focus adjusting signal (i.e., the Signal S1 of Iijima '371) from a peak value of the predetermined frequency component of the image signal (i.e., col. 4, lines 30+ of Iijima '371) obtained by said photo-receiving device (i.e., the image sensor of Video Camera as shown in Fig. 3 of Iijima '371).

8. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima '371 in view of Suda (U.S. 5,534,923).

Regarding claim 13, although Iijima '371 shows the focus adjusting device judges the luminous state of the object on the basis of a peak value of luminance of the object (i.e., noted the BPF circuit 8 and Peak detection circuit 10 of the focus control circuits as shown in Fig. 3 of Iijima '371 for judging the luminous state of the object), Iijima '371 does not explicitly show an average value of the luminance of the object to judges the luminous state of the object as recited in present claimed invention.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Suda '923. In particular, Suda '923 teaches that it is notoriously well known in art to use an average value of the luminance of the object (i.e., noted the adder 33 as shown in Fig. 2 for determining an average value of the luminance of the object; see col. 4, lines 60+ and col. 7, lines 40-45) and a peak value of luminance of the object (i.e., noted the Peak-Hold circuit 29 as shown in Fig. 2; col. 4, lines 50+) for judging the luminous state of the object in the focus control device of the camera (Fig. 2).

In view of the above, having the AF system of Iijima '371 and then given the well-established teaching of Suda '923, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the AF system of Iijima '371 as taught by Suda '923, since Suda '923 states at col. 2, lines 30+ that such a modification would provide a high accurate and stable automatic focus adjusting operation by accurately detecting a focus signal irrespective of a photographing situation.

Art Unit: 2612

Conclusion


9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hirota '428, Mabuchi '058, Iijima '549, and Yoshimura '397 discloses a camera having a focus control device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aung S. Moe whose telephone number is 703-306-3021. The examiner can normally be reached on Mon-Fri (9-5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 703-305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Aung S. Moe
Primary Examiner
Art Unit 2612

A. Moe
July 23, 2004